PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1515SG74/SC/lcg	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. **PCT/SG2002/000011**	International Filing Date *(day/month/year)* 23 January 2002	Priority Date *(day/month/year)* 23 January 2002
International Patent Classification (IPC) or national classification and IPC **Int. Cl.** [7] C12N 9/80, C12N 15/57, A01K 67/027, A61K 38/50		
Applicant INSTITUTE OF MOLECULAR AGROBIOLOGY et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheet(s).

3. This report contains indications relating to the following items:

   - I [X] Basis of the report
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [ ] Lack of unity of invention
   - V [X] Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [ ] Certain defects in the international application
   - VIII [ ] Certain observations on the international application

Date of submission of the demand 23 August 2003	Date of completion of the report 13 April 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **GARETH COOK** Telephone No. (02) 6283 2541

INTERNATIONAL PRELI[redacted]ARY EXAMINATION REPORT

[redacted]rnational application No.
PCT/SG2002/000011

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed.

☒ the description, pages **1-23,** as originally filed,
pages , filed with the demand,
pages , received on with the letter of

☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages **24, 25,** received on **5 April 2004** with the letter of. **5 April 2004**

☐ the drawings, pages **1, 2,** as originally filed,
pages , filed with the demand,
pages , received on with the letter of

☐ the sequence listing part of the description:
pages **1-16,** as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the **language,** all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☒ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☒ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-17	YES
	Claims		NO
Inventive step (IS)	Claims	1-17	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report (ISR) have been considered for the purposes of this report:

D1 Swiss-Prot accession Q9RYQ4
D2 EmbL accession AE001863
D3 WO 2001/098214
D4 Leadbetter JR *et al*, *Journal of Bacteriology*, 182(24):6921-6926
D5 Leadbetter JR, *Nature*, 411:748-749

Novelty (N) and Inventive Step (IS) claims 1 to 17

Independent claims 1 to 6 are novel and inventive as the prior art does not disclose the polypeptide or polynucleotide having SEQ ID NOs 1 or 2, or the specific fragments thereof defined in the claims, nor would these be obvious from the prior art. Claims 1 to 17 therefore meet the requirements of Articles 33(2) and 33(3) of the PCT.

Industrial Applicability (IA) claims 1 to 17.

The invention defined in the claims is considered to meet the requirements of Industrial Applicability under Article 33(4) of the PCT because it can be made by, or used in, industry.

What is claimed is:

1. A composition of matter which comprises ~~a~~ an isolated nucleic acid according to SEQ ID NO: 1.

~~2. A composition of matter which comprises a nucleic acid selected from the group consisting of nucleotides 1234-3618 of SEQ ID NO: 1, a fragment thereof and a substantially homologous variant thereof.~~

~~3~~ 2. A composition of matter which comprises an isolated nucleic acid ~~according to claim 2~~ which comprises nucleotides 1234-3618 of SEQ ID NO: 1.

~~4. A composition of matter which comprises a peptidic sequence selected from the group consisting of a peptidic sequence according to SEQ ID NO: 2, a fragment thereof and a substantially homologous variant thereof.~~

~~5~~ 3. A composition of matter which comprises ~~a~~ an isolated peptidic sequence encoded by a nucleic acid ~~selected from the~~ group consisting of nucleotides 1234-3618 of SEQ ID NO: 1~~, a fragment thereof and a substantially homologous variant thereof~~.

~~6. A composition of matter which comprises a peptidic sequence selected from the group consisting of SEQ ID NO: 2, a fragment thereof, a subunit thereof and a substantially homologous variant thereof.~~

~~7~~ 4. A composition of matter ~~according to claim 6~~ which comprises ~~a~~ an isolated peptidic sequence according to SEQ ID NO: 2.

~~8~~ 5. A composition of matter ~~according to claim 6~~ which comprises ~~a~~ an isolated peptidic sequence comprising amino acids 36-217 of SEQ ID NO: 2.

~~9~~ 6. A composition of matter ~~according to claim 6~~ which comprises ~~a~~ an isolated peptidic sequence comprising amino acids 233-794 of SEQ ID NO: 2.

~~10~~ 7. A composition of matter according to claim ~~6~~ 4 which inactivates AHL.

~~11~~ 8. A method of modulating AHL signaling activity which comprises contacting said AHL with a composition of matter according to any one of claims ~~5-10~~ 3 or 4-7.

~~12~~ 9. A transgenic plant harboring a nucleic acid ~~selected from the group consisting of nucleotides 1234-3618 of SEQ ID NO. 1, a fragment thereof and a substantially homologous variant thereof~~ of claim 2.

~~13~~ 10. A transgenic non-human animal harboring a nucleic acid ~~selected from the group consisting of nucleotides 1234-3618 of SEQ ID NO. 1, a fragment thereof and a substantially homologous variant thereof~~ of claim 2.

~~14~~ 11. A method of controlling a bacterial disease in a mammal in need thereof which comprises administering to said mammal a composition of matter according to any one of claims ~~5-10~~ 3 or 4-7, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

~~15~~ 12. A method of claim ~~14~~ 12 wherein said mammal is a human.

~~16~~ 13. A method of controlling a bacterial disease in a plant in need thereof which comprises administering to said plant a composition of matter according to any one of claims ~~5-10~~ 3 or 4-7, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

~~17~~ 14. A method of controlling a bacterial disease in a mammal in need thereof which comprises administering to said mammal a composition of matter of claim 2 and its peptide product, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

~~18~~ 15. A method of claim ~~17~~ 14 wherein said mammal is a human.

~~19~~ 16. A method of controlling a bacterial disease in a plant in need thereof which comprises administering to said plant a composition of matter of claim 2, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

~~20~~ 17. A method of controlling a bacterial disease in a plant using any bacterial species containing the composition of matter of claim 2.